

CLAIMS

What is claimed is:

- 1 1. A substrate comprising:
2 a first conductive layer;
3 a second conductive layer substantially electrically isolated from the first
4 conductive layer;
5 a via for connecting a portion of the first conductive layer to a portion of the
6 second conductive layer, wherein the via further comprises:
7 a first plate, a first electrical path from the first conductive layer to
8 the first plate; and
9 a second plate, a second electrical path from the second conductive
10 layer to the second plate.

- 1 2. The substrate of claim 1 wherein the first plate and the second plate form
2 a capacitor.

- 1 3. The substrate of claim 1 wherein the first plate includes a curved surface.

- 1 4. The substrate of claim 3 wherein the second plate includes a curved
2 surface.

- 1 5. The substrate of claim 4 wherein the first plate and the second plate form
2 a capacitor.

- 1 6. The substrate of claim 4 wherein the curve of the first plate and the curve
2 of the second plate are substantially coaxial.

- 1 7. The substrate of claim 4 wherein a concave portion of the first plate faces
2 a concave portion of the second plate.

1 8. The substrate of claim 2 wherein the first plate and the second plate are
2 separated by a dielectric material.

1 9. A substrate comprising:
2 a first conductive layer;
3 a second conductive layer substantially electrically isolated from the first
4 conductive layer;
5 a via for connecting a portion of the first conductive layer to a portion of the
6 second conductive layer, wherein the via further comprises:
7 a first portion within the via, a first electrical path from the first
8 conductive layer to the first portion; and
9 a second portion within the via, a second electrical path from the
10 second conductive layer to the second portion.

1 10. The substrate of claim 9 wherein the second portion includes a
2 substantially cylindrical shell of conductive material enclosed within the via.

1 11. The substrate of claim 9 further comprising a dielectric material
2 positioned between the first portion and the second portion includes.

1 12. A substrate comprising:
2 a first conductive layer;
3 a second conductive layer substantially electrically isolated from the first
4 conductive layer; and
5 a via for connecting an electrical portion of a circuit on the first conductive
6 layer to an electrical portion of a circuit on the second conductive layer, wherein the
7 via further comprises:
8 a first magnetizable portion lining the via;
9 an electrical path from the first conductive layer to the second
10 conductive layer; and

11 an insulator separating the first magnetizable portion from the
12 electrical path.

1 13. The substrate of claim 12 wherein the first magnetizable portion includes
2 a soft magnetic material.

1 14. The substrate of claim 12 wherein the first magnetizable portion
2 includes ferrite.

1 15. A method for forming an electrical device comprising:
2 forming via between a first layer of conductive material and a second layer
3 of conductive material;
4 lining the via with a conductive material;
5 connecting the lining to a first conductive layer;
6 forming a conductor through the via;
7 connecting the conductor to the first conductive layer;
8 connecting the lining to the second conductive layer; and
9 insulating the lining in the via from the conductor in the via.

1 16. The method of claim 15 wherein lining the opening with material
2 includes etching the bottom of the opening.

1 17. The method of claim 15 wherein lining the opening with a material
2 includes lining the opening with a magnetizable material.

1 18. The method of claim 15 wherein lining the opening includes lining the
2 opening with conductive material.

1 19. A method for forming a device within a via comprising:
2 forming a via;
3 depositing a first layer of conductive material on inside surface of the via;
4 removing a portion of the deposited first layer of conductive material;
5 depositing a dielectric material onto the remaining portion of the conductive
6 material and onto the inner surface of the via;
7 removing a second portion of the dielectric material; and
8 depositing a second layer of conductive material.

1 20. The method of claim 19 wherein removing a portion of the deposited
2 first layer includes etching.

1 21. The method of claim 19 wherein removing a portion of the deposited
2 insulative material includes etching.

1 22. The method of claim 19 wherein the amount of dielectric material
2 provides an insulator between the first conductive layer and the second conductive
3 layer.

1 23. A method of forming a device in a via of a substrate comprising:
2 forming a via;
3 depositing a first pad having a portion associated with the via;
4 depositing a second pad having a portion associated with the via, the first
5 pad electrically isolated from the second pad;
6 filling the via with a resistive material.

1 24. The method of claim 23 wherein depositing the first pad and depositing
2 the second includes placement proximate a single surface of the substrate.

1 25. The method of claim 23 wherein depositing the first pad includes
2 placement proximate a first surface of the substrate and depositing the second
3 includes placement proximate a second surface of the substrate.

1 26. The method of claim 23 wherein the filling the via with a resistive
2 material includes selecting the resistivity of the material to select the resistance
3 across the via.

1 27. A method comprising:
2 forming a via in a substrate; and
3 forming at least a portion of an electrical component in the via in the
4 substrate.

1 28. The method of claim 27 wherein forming at least a portion of an
2 electrical component in the via includes forming a resistor.

1 29. The method of claim 27 wherein forming at least a portion of an
2 electrical component in the via includes forming a capacitor.

1 30. The method of claim 27 wherein forming at least a portion of an
2 electrical component in the via includes forming a core.

1 31. The method of claim 27 wherein forming at least a portion of an
2 electrical component in the via includes forming at least a portion of a transformer.